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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/899,242	07/06/2001	Anders Furuskar	040001-073	5091

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EXAMINER	
LEE, JOHN J	

ART UNIT	PAPER NUMBER
2684	7

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/899,242	FURUSKAR ET AL.	
	Examiner	Art Unit	
	JOHN J LEE	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 July 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-81* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14,16-24,26-31,33-60,62,64-66 and 68-81* is/are rejected.

7)☒ Claim(s) *15,25,32,61,63 and 67* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

2. Claims 1-15, 24-26, and 30-81 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-70 of copending Application No. 09/774,563. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

3. Claims 1-15, 24-26, and 30-81 of this application conflict with claims 1-70 of Application No. 09/774,563. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1-14, 16-24, 26-31, 33-60, 62, 64-66, and 68-81** are rejected under 35 U.S.C. 103(a) as being unpatentable over Laaksonen (WO 00/19760) in view of Parantainen et al. (US Patent number 6,456,844).

Regarding **claims 1 and 47**, Laaksonen discloses that a method for allocating radio resources in a radio communication system (pages 3, lines 23 – pages 4, lines 7 and Fig. 3). Laaksonen teaches that selecting a service power requirement (estimate of the received power is compared to a threshold) for a first service group (first kind bearers) and a second service group (second kind bearers) (pages 5, lines 28 – pages 7, lines 36 and Fig. 2, 7, where teaches there are two kinds of bearers and determining resource usage between bearers by performing the estimate of the received power is compared to a predetermined threshold). Laaksonen teaches that determining an amount of radio resources for the first and second service groups to achieve the respective received service power requirement (pages 5, lines 28 – pages 7, lines 36 and Fig. 2, 7, where teaches determining resource usage between bearers that first kind bearers can use small amounts of resources and second kind of bearers consumes large amounts of air interface resources by performing the estimate of the received power is compared to a predetermined threshold). Laaksonen teaches that allocating the radio resources between

the first and second service groups based on a difference between the determined amount of radio resources (pages 3, lines 23 – pages 6, lines 11 and Fig. 3, 4, 7, where teaches pages taking into account differences between the resource usage of different bearers and providing efficient and adjustable control over admission of bearers using small amounts of resources and using large amounts of resources), wherein the radio resources are allocated per bearer within the first and second service groups (pages 3, lines 23 – pages 6, lines 11 and Fig. 3, 4, 7).

Laaksonen does not exactly disclose the limitation "selecting a service quality requirement for radio connections". However, Parantainen discloses the limitation "selecting a service quality requirement for radio connections" (Fig. 1, 4, abstract, and column 4, lines 40 – column 5, lines 36, where teaches measured interference level goes below the interference threshold determined for the free channel and the interference threshold of the channel is changed adaptively to ensure the best possible quality of the service offered for the served radio connections). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Laaksonen system as taught by Parantainen, provide the motivation to improve quality value of served radio connections in radio communication system.

Regarding **claims 2 and 48**, Laaksonen discloses that the determined amount of radio resources is a relative amount of radio resources between the first and second service groups (pages 3, lines 23 – pages 6, lines 11 and Fig. 3, 4, 7).

Regarding **claims 3 and 49**, Laaksonen discloses that the determined amount of radio resources is an absolute amount of radio resources for the first and second service groups (pages 3, lines 23 – pages 6, lines 11 and Fig. 3, 4, 7).

Regarding **claims 4 and 50**, Laaksonen and Parantainen disclose all the limitation, as discussed in claim 1. Furthermore, Laaksonen further discloses that the service quality is a function of user quality, within the service group (pages 5, lines 28 – pages 7, lines 36 and Fig. 2, 7).

Regarding **claims 5 and 51**, Laaksonen and Parantainen disclose all the limitation, as discussed in claim 1. Furthermore, Laaksonen further discloses that compensating the amount of radio resources for the first and second service groups based upon a percentage of users of the first and second service groups which is desired to achieve the quality of service requirement (pages 14, lines 3 – pages 16, lines 20 and Fig. 5, 7). Laaksonen teaches that the radio resources are allocated based upon the compensated amount of radio resource (pages 18, lines 21 – pages 19, lines 14 and Fig. 17).

Regarding **claims 6 and 52**, Laaksonen and Parantainen disclose all the limitation, as discussed in claim 1. Furthermore, Laaksonen further discloses that the quality of service requirements is measured or estimated by carrier-to-interference ratios, bit error probability, bit error rate, frame erasure rate or block error rate (pages 11, lines 7 – pages 13, lines 12 and Fig. 4, 7).

Regarding **claims 7 and 53**, Laaksonen teaches that the compensation is based on the carrier-to-interference ratio standard deviation (pages 17, lines 6 – pages 18, lines 17 and Fig. 6, 7).

Regarding **claims 8 and 54**, Laaksonen teaches that the amount of radio resources is based on a power level used for the first and second service groups and the difference between the determined amount of radio resources is a difference in power between the first and second service groups (pages 6, lines 19 – pages 7, lines 36 and Fig. 1, 2).

Regarding **claims 9 and 55**, Laaksonen teaches that the difference in power between the first and second service groups is applied to a fixed output power of the first service group (Fig. 1, 7 and pages 4, lines 32 – pages 6, lines 11).

Regarding **claims 10 and 56**, Laaksonen teaches that the difference in power between the first and second service groups is applied to a maximum power for the first service group (pages 16, lines 4 – pages 17, lines 2 and Fig. 5, 6).

Regarding **claims 11 and 57**, Laaksonen teaches that the difference in power between the first and second service groups is applied to an initial power for the first service group (pages 6, lines 19 – column 7, lines 36 and Fig. Fig. 2, 7).

Regarding **claims 12 and 58**, Laaksonen teaches that the difference in power between the first and second service groups is applied to a fixed power, a maximum power and an initial power for the first service group (pages 15, lines 14 – pages 18, lines 17 and Fig. 6, 7).

Regarding **claims 13 and 59**, Laaksonen teaches that adjusting the power for individual users of a service group using individual power control loops (pages 15, lines 14 – pages 17, lines 2 and Fig. 6).

Regarding **claims 14, 34, 60 and 69**, Laaksonen and Parantainen disclose all the limitation, as discussed in claim 1. Furthermore, Laaksonen further discloses that the amount of radio resource is further based on the number of channels allocated to the first and second service group (pages 3, lines 23 – pages 4, lines 7 and Fig. 7).

Regarding **claim 16**, Laaksonen and Parantainen disclose all the limitation, as discussed in claim 1. Furthermore, Laaksonen further discloses that calculating a sum of the total power for all users in the radio communication system (pages 15, lines 14 – pages 17, lines 2 and Fig. 5, 7). Laaksonen teaches that admitting new users to the radio communication system if the sum is less than a predetermined threshold (Fig. 5, 7 and pages 14, lines 3 – pages 15, lines 24).

Regarding **claim 17**, Laaksonen teaches that dropping users from the radio communication system if the sum is greater than another predetermined threshold, wherein the radio communication system includes at least two base stations (Fig. 5 and pages 14, lines 3 – pages 15, lines 24).

Regarding **claim 18**, Laaksonen teaches that calculating a function of the power for all users in the radio communication system (pages 6, lines 19 – pages 7, lines 36 and Fig. 2, 5). Laaksonen teaches that admitting new users to the radio communication system if the calculated function is less than a predetermined threshold (Fig. 5 and pages 14, lines 3 – pages 15, lines 24).

Regarding **claim 19**, Laaksonen teaches that dropping users from the radio communication system if the calculated function is greater than another predetermined threshold (Fig. 5 and pages 14, lines 3 – pages 15, lines 24). Laaksonen teaches that the radio communication system includes at least two base stations (Fig. 5, 7 and pages 18, lines 21 – pages 19, lines 14).

Regarding **claim 20**, Laaksonen teaches that calculating a weighted sum of the power for all users in the radio communication system (pages 17, lines 6 – pages 18, lines 17 and Fig. 5, 7). Laaksonen teaches that admitting new users to the radio communication system if the weighted sum is less than a predetermined threshold (Fig. 5, 6 and pages 14, lines 3 – pages 15, lines 24).

Regarding **claim 21**, Laaksonen teaches that dropping users from the radio communication system if the weighted sum is greater than another predetermined threshold, wherein the radio communication system includes at least two base stations (Fig. 5, 6, pages 17, lines 6 – pages 18, lines 17, and pages 14, lines 3 – pages 15, lines 24).

Regarding **claim 22**, Laaksonen and Parantainen disclose all the limitation, as discussed in claims 1 and 16. Furthermore, Laaksonen further discloses that calculating a sum of the total power for all users communicating with the base station; admitting new users to the base station if the sum is less than a predetermined threshold (pages 15, lines 14 – pages 17, lines 2 and Fig. 5, 7). Laaksonen teaches that dropping users from the base station if the sum is greater than the predetermined threshold (Fig. 5, 7 and pages 14, lines 3 – pages 15, lines 24).

Regarding **claims 23 and 29**, Laaksonen teaches that the radio communication system is a GSM/EDGE radio access network (GERAN) (Fig. 7 and pages 18, lines 21 – pages 19, lines 14).

Regarding **claim 24**, Laaksonen teaches that the selecting step and the determining step are continuously performed to provide an updated allocation of radio resources (pages 3, lines 23 – pages 4, lines 7, Fig. 6, 7, and pages 18, lines 21 – pages 19, lines 14).

Regarding **claim 26**, Laaksonen teaches that the selecting, determining and allocating steps are performed for the first service group, the second service group and a third service group (pages 12, lines 3 – pages 13, lines 12 and Fig. 4).

Regarding **claim 27**, Laaksonen and Parantainen disclose all the limitation, as discussed in claims 1 and 16. Furthermore, Laaksonen further discloses that calculating the total amount of radio resources employed by the first and second service groups (pages 3, lines 23 – pages 6, lines 11 and Fig. 3, 4, 7, where teaches calculating and taking into account differences between the total amount of the resource usage of different bearers). Laaksonen teaches that allocating radio resources to a new user to the radio communication system if the total amount of radio resources is less than a predetermined threshold (Fig. 5, 7 and pages 14, lines 3 – pages 15, lines 24).

Regarding **claim 28**, Laaksonen teaches that reallocating radio resources from a user in the first or second service group if the total amount of radio resources is greater than the predetermined threshold (Fig. 5, 7 and pages 14, lines 3 – pages 15, lines 24).

Regarding **claims 30 and 65**, Laaksonen and Parantainen disclose all the limitation, as discussed in claims 27 and 28. Furthermore, Laaksonen further discloses that reallocating radio resources proportionally from the second service group to the first service group such that the service quality limits are simultaneously met (Fig. 5, 7 and pages 14, lines 3 – pages 15, lines 24).

Regarding **claims 31 and 66**, Laaksonen teaches that the radio resources are reallocated to maximize capacity (pages 15, lines 14 – pages 17, lines 2 and Fig. 5, 6).

Regarding **claims 33 and 68**, Laaksonen teaches that the radio resources are an output power for the first and second service groups (pages 15, lines 14 – pages 17, lines 2 and Fig. 5, 6).

Regarding **claims 35 and 70**, Laaksonen teaches that the output power for the first and second service groups is a per bearer output power for the first and second service groups (pages 15, lines 14 – pages 17, lines 2 and Fig. 5, 6).

Regarding **claims 36 and 71**, Laaksonen and Parantainen disclose all the limitation, as discussed in claims 11 and 12.

Regarding **claims 37 and 72**, Laaksonen and Parantainen disclose all the limitation, as discussed in claims 10 and 33.

Regarding **claims 38 and 73**, Laaksonen and Parantainen disclose all the limitation, as discussed in claims 9 and 33.

Regarding **claims 39 and 74**, Laaksonen and Parantainen disclose all the limitation, as discussed in claims 1 and 27. Furthermore, Laaksonen further discloses that allocating a first transmit power per bearer for a first service group and allocating a

second transmit power per bearer for a second service group (pages 3, lines 23 – pages 6, lines 11 and Fig. 3, 4, 7).

Regarding **claims 40 and 75**, Laaksonen and Parantainen disclose all the limitation, as discussed in claims 1 and 12. Furthermore, Laaksonen further discloses that the first and second transmit powers are allocated to a maximum or an initial output power per bearer for the first and second service groups (pages 15, lines 14 – pages 18, lines 17 and Fig. 6, 7).

Regarding **claims 41 and 76**, Laaksonen and Parantainen disclose all the limitation, as discussed in claims 1 and 27. Furthermore, Laaksonen further discloses that the first and second transmit powers are allocated based upon a measurement of bearer quality (pages 16, lines 1 – pages 18, lines 17 and Fig. 5, 6).

Regarding **claims 42 and 77**, Laaksonen and Parantainen disclose all the limitation, as discussed in claims 1 and 39. Furthermore, Laaksonen further discloses that estimating a link quality, wherein the first and second transmit powers are allocated based upon the estimate (pages 8, lines 3 – pages 11, lines 3 and Fig. 2, 3).

Regarding **claims 43 and 78**, Laaksonen and Parantainen disclose all the limitation, as discussed in claims 1 and 39. Furthermore, Laaksonen further discloses that the first and second transmit powers are allocated to balance a quality of service between the first and second service groups (pages 11, lines 7 – pages 13, lines 12 and Fig. 3, 4).

Regarding **claims 44 and 79**, Laaksonen teaches that the first and second transmit powers are allocated based upon a desired fraction of satisfied users for each of the first and second service groups (pages 13, lines 16 – pages 15, lines 24 and Fig. 4, 5).

Regarding **claims 45 and 80**, Laaksonen and Parantainen disclose all the limitation, as discussed in claims 1 and 24. Furthermore, Laaksonen further discloses that the first and second transmit powers are repeatedly updated based upon estimates of quality for the first and second service groups (pages 3, lines 23 – pages 4, lines 7, Fig. 6, 7, and pages 18, lines 21 – pages 19, lines 14).

Regarding **claims 46 and 81**, Laaksonen and Parantainen disclose all the limitation, as discussed in claims 1 and 24. Furthermore, Laaksonen further discloses that the first and second transmit powers are repeatedly updated based upon measurements of quality for the first and second service groups (pages 3, lines 23 – pages 4, lines 7, Fig. 6, 7, and pages 18, lines 21 – pages 19, lines 14).

Regarding **claim 62**, Laaksonen and Parantainen disclose all the limitation, as discussed in claims 1 and 24.

Regarding **claim 64**, Laaksonen and Parantainen disclose all the limitation, as discussed in claims 1 and 26.

Allowable Subject Matter

6. Claims 15, 25, 32, 61, 63, and 67 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record fails to disclose "the amount of radio resource is further based on the scheduling to the first and second service group such that the amount of channel used by each service group is controlled by the scheduling, the percentage of

users of the first and second service groups who can achieve the quality of service requirement is measured and the amount of radio resources is adaptively compensated for based upon the updated percentage of users of the first and second service groups, and determining an amount of radio resources at which a third service group can provide an minimum quality of service level and reallocating radio resources from the fourth service group to the third service group such that the total load between the first, second, third and fourth service groups is maximized" as specified in the claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Oliva (US Patent number 6,504,820) discloses Connection Admission Control.

Averbuch et al. (US Patent number 6,701,702) discloses Providing Information to a Plurality of Communication Units in a Wireless Communication System.

Information regarding...Patent Application Information Retrieval (PAIR) system... at 866-217-9197 (toll-free)."

Any response to this action should be mailed to:

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or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:

(703) 308-6606 (for informal or draft communications, please label "PROPOSED" or "DRAFT").

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John J. Lee** whose telephone number is **(703) 306-5936**. He can normally be reached Monday-Thursday and alternate Fridays from 8:30am-5:00 pm. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, **Nay Aung Maung**, can be reached on **(703) 308-7745**. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

J.L
August 5, 2004

NICK CORSARO
PATENT EXAMINER

John J Lee